

REMARKS

The Examiner is thanked for the careful examination of the application. However, in view of the remarks that follow, the Examiner is respectfully requested to reconsider and withdraw the outstanding rejections.

Rejections under 35 U.S.C. § 103(a):

Claims 1-24 are rejected for obviousness in view of U.S. Patent No. 3,043,014, hereinafter Loechl, in combination with U.S. Patent No. 2,770,216, hereinafter Schock.

Claim 1 and depending claims

Claim 1 recites a manufacturing line for gypsum boards, the manufacturing line comprising a conveyor for moving gypsum boards in a line; a spray arm having a pivot at one end thereof for supporting the spray arm in a pivotable manner; a base frame mounted adjacent the conveyor; a support for the pivot mounted on the base frame so that the spray arm can be pivoted from an operative position wherein the spray arm extends over the conveyor to an inoperative position; a plurality of spray nozzles arranged on the spray arm for spraying a coating on gypsum boards on the conveyor; and a pump system on the frame to deliver the coating to the plurality of spray nozzles.

The rejection is based on the argument that "*Loechl discloses a conveyor for moving gypsum boards, spray arms, base frame, a plurality of spray nozzles and pump system (Figs. 1-3 ; col. 3 ; lines 17-56). Loechl does not disclose spraying arms with pivot mounting to pivot from operative positions. Schock discloses pivot arms for spray heads (Fig. 1). It would have been obvious to one with ordinary skill in*

the art to include pivot arms for spray heads because Schock teaches uniformity as desirable in the spraying art (col. 1, lines 15-25)".

This argument is improperly based on hindsight. Schock does indeed disclose a pivot arm, albeit *not* for a manufacturing line for gypsum boards. Furthermore, it discloses a pivot arm for a *single* spray head and not a pivot arm for a plurality of spray heads as is the case of claim 1. In addition, Schock relates to a spray apparatus for applying adhesive to a web, and Loechl relates to a plurality of spray heads for applying water to a gypsum board in a dryer. Thus, Schock and Loechl are directed to nonanalogous technologies.

The pivot arm of Schock does not enable the corresponding spray head to pivot **from an operative to an inoperative position**, or vice versa. The pivot arm of Schock is only reciprocated back and forth from side to side across a web which is to be sprayed (all operative positions), and it is not meant to travel away from the web to be sprayed, i.e., to what might be considered an inoperative position. The pivot arm of Schock typically pivots **during** the spraying operation. Thus, it does not pivot "from an operative position wherein the spray arm extends over the conveyor to an inoperative position".

The pivoting of the spray head of Schock on aims at providing uniformity in the spraying, since, as underlined by Examiner, "*uniformity [is] desirable*". In contrast, **a purpose of the pivot arm of the present invention is not uniformity in the spraying**; the pivot arm of the present invention is rather intended to enable "*different types of boards*" to be manufactured on the same manufacturing line, some "*coated with coated equipment*", and some "*not [...] coated*" (paragraph 4). In other words, to move the spray arm from an operative position to an inoperative position.

Although uniformity in the spraying is indeed desirable in the present invention, it is achieved by entirely different means, namely the spacing between the respective nozzles, e.g., from different clusters.

In other terms, based on the closest prior art describing a manufacturing line for gypsum boards (Loechl), one skilled in the art would not have found that Schock teaches to include a pivot arm in said manufacturing line, because :

- 1) the problem solved by the pivot arm of Schock (uniformity in the spraying) has nothing to see with the problem to be solved by the present invention (the possibility of making boards with or without coating on the same manufacturing line); and
- 2) the technical characteristics of the pivoting spray arm of the present invention differ from those of the pivoting arm of Schock in that the stroke of the former encompasses both operative and inoperative positions, while the stroke of the latter only covers operative positions.

Claim 1 is therefore not obvious over Loechl combined with Schock. Claims 2-13 depend from claim 1, and are thus also patentable.

Claim 14 and depending claims

Claim 14 recites a spray arm for a manufacturing line for gypsum boards, the spray arm comprising a support beam; a pivot at one end thereof for supporting the spray arm in a pivotable manner so that the spray arm can be pivoted at least about 90 degrees from an operative position to an inoperative position; and a plurality of spray nozzles arranged on the support beam for spraying a coating on gypsum boards, the plurality of nozzles arranged in clusters and the nozzles in each cluster

are staggered so that at least some of the nozzles in each cluster are at different distances from the support beam with respect to each other.

Claim 14 is not obvious in view of Loechl combined with Schock. First, the pivot of the spray arm according to claim 14 is neither disclosed nor suggested by Loechl or Schock, as set forth above. Second, the arrangement of nozzles in **clusters** in which nozzles are "*at different distances from the support beam with respect to each other*" is neither disclosed nor suggested by either Loechl or Schock, or the combination thereof. On the one hand the arrangement of the plurality of nozzles of Loechl is not discussed, but in Fig. 1, the nozzles are uniformly placed on the support arm. Furthermore, the apparatus of Schock only includes a single spray head.

Claim 14 is therefore not obvious over Loechl combined with Schock. Claims 15-20 depend from claim 14, and are thus also patentable.

Claim 21 and depending claims

Claim 21 recites a method of spraying a coating on a gypsum board on a gypsum board manufacturing line, the method comprising providing a spray arm having a plurality of nozzles attached thereto over the gypsum board manufacturing line; the plurality of nozzles are arranged in clusters and the nozzles in each cluster are staggered so that at least some of the nozzles in each cluster are at different distances from the spray arm with respect to each other, and the nozzles are further arranged such that the spray from each nozzle covers less than an entire width of the gypsum board on the line; emitting a coating from the spray nozzles such that a plurality of overlapping sprays are sprayed onto the gypsum board in succession;

and wherein the nozzles are arranged such that a substantially uniform coating is applied to the board.

As discussed above for claim 14, the arrangement of nozzles in **clusters** in which "*the nozzles [...] are **at different distances** from the spray arm with respect to each other*" is neither disclosed nor suggested by either Loechl or Schock.

Claim 21 is therefore inventive over Loechl combined with Schöck. Claims 22-24 depend from claim 21, and are thus also patentable.


Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw the rejections of claims 1-24 in view of the foregoing remarks.

In the event that there are any questions concerning this response, or the application in general, the Examiner is respectfully urged to telephone the undersigned attorney so that prosecution of the application may be expedited.

Respectfully submitted,

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